

VEL'YASHEV, L.

~~\_\_\_\_\_~~ In the typewriter department. Prom.koop. no.7:58-59 J1'55.  
(MLRA 8:11)

1. Nachal'nik tsekha mashinopisi arteli imeni 800-letiya Moskvy  
(Typewriting)

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich;  
BARINOVA, O.N., red.; TRUSCV, N.S., tekhn. red.

[Design and repair of office typewriters] Konstruktsiia i  
remont kantseliarskikh pishushchikh mashin. Moskva, Gos-  
bytizdat, 1963. 198 p. (MIRA 16:11)  
(Typewriters)

VELYAVSKIY, A.H.

Increasing the mechanical resistance of iron castings and reducing  
machine weight. Proizv.-tekhn.inform. no.5:3-22 '52.

(MLRA 10:3)

1. Nachal'nik laboratorii Shcherbakovskogo zavoda poligraficheskikh  
mashin. (Cast iron) (Machinery--Design)

VELYAYEVA, Z.V.

Functional state of the vegetative nervous system in peptic ulcer.  
Ter. arkh., Moskva 24 no. 5:50-57 Sept-Oct 1952. (CIML 23:3)

1. Of the Therapeutic Sector (Head -- Prof. M. V. Chernorutskiy, Active Member of the Academy of Medical Sciences USSR), Institute of Physiology imeni I. P. Pavlov (Director -- Academician K. M. Bykov), Academy of Sciences USSR and of the Hospital Therapeutic Clinic, First Leningrad Medical Institute imeni I. P. Pavlov.

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5

VELYCHKO, Mykola

Makivka; a speech delivered in New York on the 35th anniversary of the battle on Makivka  
Niu-York, Stanytsia USS, 1951. 32 p.

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5"

VELYCHKO, Samiile.

Skazanie o voinie kozatskoi z poliakamy. U Kyivi, 1926. 268 p. (Pamiatky ukrains'koho  
pys'menstva, t. 1)

CYr.4 DK1385

VELIKA, Z., arkitektor

Houses for dairy workers on collective-farm dairy farms in  
Dneprometrowsk Province. Sil'.bud. 7 no.12:12-14 D '57.  
(MIRA 13:5)  
(Dneprometrowsk Province--Farm buildings)

Investigating the demulsification action of cracked residues on the Baku crude-oil emulsions. V. N. Kurnilova and T. A. Velyuga. *Gosnauk- Naftaizdat*, 6, No. 1-2, 68-8 (1936).—The emulsions were completely broken after treatment of the Baku crude oil with 4.0% of cracked residues at  $65-70^\circ$  for 12-30 hrs. The heating temp. depends on the initial h. p. of the crude oil and should not be higher than this temp. A. A. B.

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## AMERICAN METALLURGICAL LITERATURE CLASSIFICATION

11301 030173

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5"

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich; SHELIUTTO,  
Ye.P., red.; ZAYTSVA, L.A., tekhn.red.

[Repairing calculating machines] Remont arifmometrov. Moskva,  
Vses.koop.izd-vo, 1960. 77 p. (MIRA 13:11)  
(Calculating machines--Maintenance and repair)

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich; SHELYUTTO,  
Ye.P., red.; OVCHINNIKOVA, G.I., red.; ZAYTSEVA, L.A., tekhn. red.

[Maintenance and repair of typewriters] Remont pishushchikh mashin.  
Moskva, Gos. izd-vo mestnoi promyshl. i khudozh. promyslov RSFSR,  
1961. 169 p.  
(Typewriters—Maintenance and repair)

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich;  
KOMAROVA, V.V., red.; TRUSOV, N.S., tekhn. red.

[Repair of typewriters] Remont portativnykh pishushchikh ma-  
shin. [n.p.] Gosmostpromizdat, 1962. 139 p. (MIRA 15:10)  
(Typewriters—Repairing)

VELIKAYA, R.R. [Velyka, R.R.]

Electric activity of neurons of the visual cortex in rabbits.  
Fiziol. zhur. [Ukr.] 10 no.4:450-459 J1-Ag '64.  
(MIRA 18:11)

1. Otdel nevrologii i neyrofiziologii i laboratoriya obshchey  
fiziologii Instituta fiziologii im. A.A.Bogomol'tsa AN UkrSSR,  
Kiyev.

VELYUGO, V.

Training instructors of the Society for "Ready for antiaircraft Defense." Voen. znan. 34 no. 6:18 Je '58. (MIRA 11:8)

1. Inspektor TSentral'nogo Komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.  
(Air defenses)

VELYUGO, V.

Training in the use of personal means of protection. Voen. znan.  
39 no.6:34-35 Je '63. (MIRA 16:8)  
(Clothing, Protective)

BABKIN, I.A.; VELYUGO, V.M.; DIVAKOV, P.D.; ZAPOL'SKIY, G.N.; KIPRIYAN, K.M.; KISELEV, M.G.; KORABLEV, M.D.; SIIKOV, G.A.; SMORODIN, I.Ya.; KANEVSKAYA, M.D., red.; GERASIMOVA, V.N., tekhn.red.

[Manual for training and testing for a first-class rating in the organization "Ready for Antiaircraft Defense."] Uchebno-metodicheskoe posobie po provedeniju trenirovok i priemu norm "Gotov k PVO" 1-i stupeni. Moskva, Izd-vo DOSAAF, 1959. 110 p.

(MIRA 12:5)

1. Vsesoyuznoye dobrovol'noye obshchestvo sodeystviya armii, aviatii i flotu.

(Civil defense)

BEZGINOV, I.P., professor-prepodavatel', polkovnik,; VELYUGO, V.M., professor-prepodavatel', polkovnik,; OERASIMOV, A.I., professor-polkovnik, polkovnik,; LEBEDEV, A.I., professor-prepodavatel', polkovnik,; MILYUTENKOV, D.M., professor-prepodavatel', polkovnik,; PROKHORKOV, I.I., professor-prepodavatel', polkovnik,; SEKACHEV, V.I., professor-prepodavatel', polkovnik,; SOROKIN, V.N., professor-prepodavatel', polkovnik,; UKHOV, N.M., professor-prepodavatel', polkovnik,; FEDOTOV, B.I., professor-prepodavatel', polkovnik,; SHIRYAKIN, N.V., professor-prepodavatel', polkovnik,; SHMORLEV, M.S., professor-prepodavatel', polkovnik,; ANISIMOV, N.I., professor-prepodavatel', polkovnik,; BULATOV, A.A., professor-prepodavatel', podpolkovnik,; SIDORENKO, A.A., professor-prepodavatel', podpolkovnik,; SHKODUNOVICH, N.N., general-leytenant, glavnyy red.; BANNIKOV, M.K., polkovnik, red.; DAVYDOV, F.M., polkovnik, red.; LOZOVOY-SHEVCHENKO, V.M., general-major-aviatsii, red.; SHIPOVA, B.V., polkovnik, red.; MOROZOV, B.N., polkovnik, red.; VOLKOVA, V.E., tekhn. red.

[Concise dictionary of operational-tactical and general military terms] Kratkiy slovar' operativno-takticheskikh i obshchevoennykh slov (terminov). Moskva, Voen. izd-vo M-va obor. SSSR, 1958. 323 p. (MIRA 11:11)

1. Moscow. Voyennaya akademiya imeni M.V.Frunze. 2. Krasnoznamennaya, ordena Lenina i ordena Suvorova 1-y stepeni Voenmaya akademiya imeni M.V.Frunze (for all except Shkodunovich, Bannikov, Davyдов, Lozovoy-Shevchenko, Shipova, Morozov, Volkova).  
(Military art and science--Dictionaries)

VELYUKHANOVA, G.A.; PASYNKOV, R.Ye.; POZERN, V.I.; EL'GARD, A.M.

Piezoelectric properties of polarized ceramics in strong variable  
electric fields. Izv. AN SSSR Ser. Fiz. 24 no.11:1362-1365 N '60.  
(MIRA 13:12)

(Ceramics—Electric properties)  
(Piezoelectricity) (Electric fields)

24,28/00  
24,75/00

AUTHORS:

Valyukhanova, G. A., Pasynkov, R. Ye., Pozern, V. I., and  
Popov, V. P.

45343  
S/181/63/005/002/019/051  
B104/B102

TITLE:

Study of the mechanical nonlinearity of a series of poly-  
crystalline ferroelectrics

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 506-512

TEXT: The mechanical properties of the following five piezoceramic  
materials are studied: BaTiO<sub>3</sub> (I); 95%BaTiO<sub>3</sub> + 5%CaTiO<sub>3</sub> (II);  
95%BaTiO<sub>3</sub> + 5%CaTiO<sub>3</sub> + 0.75%CoCO<sub>3</sub> (III); 40% BaNb<sub>2</sub>O<sub>6</sub>+60%PbNb<sub>2</sub>O<sub>6</sub> (IV);  
Pb<sub>0.95</sub> Sr<sub>0.05</sub> (Zr<sub>0.63</sub>Ti<sub>0.47</sub>)O<sub>3</sub> + 1%Ta<sub>2</sub>O<sub>5</sub> (V). Young's modulus E was  
determined from the resonance frequencies of rods. The mechanical Q factor, Q<sub>M</sub>, was determined from the experimental  
frequency characteristics of the total current. The absolute magnitudes  
of the mechanical stresses with small oscillations were determined from the experimental  
relations between mechanical stresses σ, the amplitude of oscillation  
velocities and the active current passing through the transducer.

Card 1/2

Study of the mechanical nonlinearity ... B104/B102 S/181/63/005/002/019/051

Results:  $Q_M(\sigma)$  and  $E(\sigma)$  remain virtually constant in the frequency range from 10 to 40 kc/sec. The qualitative agreement between the changes of the real and the imaginary part of  $E$  indicates a close connection between elastic deformations and the attendant losses of mechanical energy. The relations between the mechanical properties ( $E(\sigma)$ ,  $\tan \delta_M = 1/Q_M$ ) and the electrical properties ( $\epsilon(E)$ ,  $\tan \delta(E)$ ) which had been reported earlier (R. Gerson, J. Appl. Phys., 31, 1, 188, 1960; J. Acoust. Soc. Am., 32, no. 10, 1297, 1960) are confirmed. There are 8 figures and 2 tables.

SUBMITTED: August 27, 1962

Card 2/2

VELYUKHANOVA, G.A.; PASYNKOV, R.Ye.; POZRN, V.I.; POPOV, V.P.

Study of the mechanical nonlinearity of certain polycrystalline  
ferroelectrics. Fiz. tver. tela 5 no.2:506-512 F '63.  
(MIRA 16:5)  
(Ferroelectric substances—Testing)

8 5879

9.2181 (3203,2303)  
24.7800 (1144,1162)

S/048/60/024/011/015/036  
B006/B056

AUTHORS: Velyukhanova, G. A., Pasynkov, R. Ye., Pozern, V. I.,  
El'gard, A. M.

TITLE: The Piezoelectric Properties of Polarized Ceramics in  
Strong, Variable Electric Fields

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,  
Vol. 24, No. 11, pp. 1362 - 1365

TEXT: The present paper is a reproduction of a lecture delivered on the  
3rd Conference on Ferroelectricity, which took place in Moscow from  
January 25 to 30, 1960. Under the same assumptions as made in Ref.1, the  
authors calculated the dependence of the piezomoduli  $d_{33}$  and  $d_{31}$  upon  
electric field strength; for the case of tetragonal symmetry, they obtain  
 $d_{33}^{(1)}(E_z) = \frac{2\nu_{33}^{Poz}}{4\pi} \epsilon_{zz}^{(1)}(E_z); d_{31}^{(1)}(E_z) = \frac{2\nu_{31}^{Poz}}{4\pi} \cdot \epsilon_{zz}^{(1)}(E_z)$ ; the super-  
script (1) denotes that the first harmonic is investigated; the  $\nu_{ik}$  are

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The Piezoelectric Properties of Polarized  
Ceramics in Strong, Variable Electric Fields

S/048/60/024/011/015/036  
B006/B056

the electrostriction coefficients,  $P_{oz}$  the components of polarization.

It further holds that  $\epsilon_{zz}^{(1)}/\epsilon_{z zo} \approx d_{33}^{(1)}/d_{330} = d_{31}^{(1)}/d_{310} = f(e_z)$ . The third subscript o means that the moduli have been measured in the case of very weak fields. The field strength dependence of the piezo-moduli was measured on cylindrical samples which were radially and tangentially polarized, viz. for the following substances: 1)  $\text{BaTiO}_3$ , 2) 95% $\text{BaTiO}_3$  + 5% $\text{CaTiO}_3$ , and 3)  $\text{BaTiO}_3$  + 0.75% $\text{CoCO}_3$ . To the sample (which was in the air), pulses with 8 kc/sec were applied with a pulse duration of 5 msec; the mechanical resonance frequency was about 15 kc/sec. The temperature of the samples, which practically did not change either at  $\sim 8 \text{ kv/cm}$ , was controlled by means of thermocouples, and could be varied between  $-20$  and  $+40^\circ\text{C}$ . The results obtained, which are shown in diagrams, may be summarized as follows: 1) the ratio  $d_{ik}^{(1)}/d_{iko}$  in all samples increases with the field strength (up to  $\sim 4.5 \text{ kv/cm}$ ), 2) in fields of more than  $4.5 \text{ kv/cm}$ ,  $d_{ik}^{(1)}/d_{iko}$  decreases rapidly for  $\text{BaTiO}_3$ , and less rapidly for

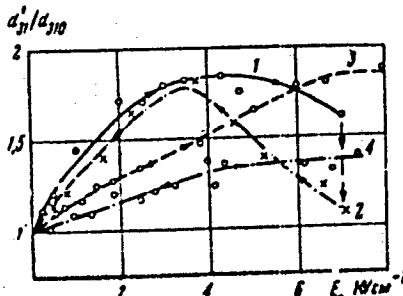
Card 2/3

6879  
The Piezoelectric Properties of Polarized  
Ceramics in Strong, Variable Electric Fields

S/048/60/024/011/015/036  
B006/B056

the second composition, and increases further for the third composition  
of the samples. 3) The behavior of  $d_{33}^{(1)}$  and  $d_{31}^{(1)}$  agrees qualitatively.

4) The curves (in both directions)  $d_{1k}^{(1)}/d_{100} = f(E_{\sim})$  recorded at 8 kv/cm  
in the course of 30 min, take a completely equal course for compositions  
2 and 3 (Curves 3 and 4), and for 1 the curves recorded in the two direc-  
tions (Curves 1 and 2) deviate from each other (cf. the attached figure).  
There is qualitative agreement with the theory. There are 4 figures and  
6 references: 4 Soviet, 1 US, and 1 Canadian.



Card 3/3

V. V. SOKHOV (S. I. R.) PROFESSOR, R. N.

Production of large neutron beams with energies of 2.5 and  
14 Mev. Pribr. i Tekhn. eksp., 3 no.4 (12-16) 31-Ag '64.  
(M. RA 17:12)

I. Fizika i Tekhnika Elementarnykh Chastits i AN SSSR.

VELYUKHOV, G.Ye.; PROKOF'YEV, A.N.

Interaction of 14.1 Mev. neutrons with tritium. Izd. fiz. 1  
no.6:1009-1013 Je '65. (MIRA 18:6)

1. Fiziko-tehnicheskiy institut imeni Ioffe AN SSSR.

33094

3/638/61/001/000/017/056  
B104/B138

24.6600

AUTHORS: Velyukhov, G. Ye., Prokof'yev, A. N., Starodubtsev, S. V.

TITLE: Study of capture reactions of light nuclei with 14.1-Mev neutrons

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 129 - 134

TEXT: The reaction  $T(d, n)\text{He}^4$  was the neutron source for studying the reaction  $(n, d)$  with 14.1-Mev neutrons on a number of isotopes. The deuterons were accelerated to 260 Mev in a Cockcroft-Walton generator. The neutron yield was determined with a CsI(Tl) monitor measuring the $\alpha$ -particles from reaction  $T(d, n)\text{He}^4$ . The telescope consisted of a single chamber into which was placed the target of the test substance, the boron counters, the unseparated foils and the NaI(Tl) crystal. To study angular distributions the whole chamber could be rotated about an axis running vertically through the target. The chamber was filled with a gas mixture

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S/638/61/001/000/017/056  
B104/B138

Study of capture reactions ...

composed of 95% K<sub>2</sub>, 5% CH<sub>4</sub>; pressure 150 mm Hg. Three reactions were studied: F<sup>19</sup>(n, d)O<sup>18</sup>; P<sup>31</sup>(n, d)Si<sup>30</sup>; S<sup>32,34</sup>(n, d)P<sup>31,33</sup>. Teflon (CF<sub>2</sub>-CF<sub>2</sub>) targets with a density of 5.1 mg/cm<sup>2</sup> were used for the first reaction. The neutron flux was 2·10<sup>9</sup> neutrons/cm<sup>2</sup>. Red phosphorus deposited onto a platinum backing was used for studying reaction P<sup>31</sup>(n, d)Si<sup>30</sup>. Density was 4.45 mg/cm<sup>2</sup>, neutron flux 2·10<sup>9</sup> neutrons/cm<sup>2</sup>. The natural isotope mixture was used for studying reaction S<sup>32,34</sup>(n, d)P<sup>31,33</sup>. The target was made by depositing sulfur onto a tantalum backing. Results are tabulated. There are 5 figures, 1 table, and 14 non-Soviet references. The four most recent references to English-language publications read as follows: Thomas R. G., Phys. Rev., 97, 224, 1955; Glenn, Frye, Phys. Rev., 93, 1087, 1957; Carlson R., Phys. Rev., 107, 1094, 1957; Ribe F. L., Phys. Rev., 106, 769, 1957.

ASSOCIATION: Leningradskiy fiziko-tehnicheskiy institut AN SSSR (Leningrad Physicotechnical Institute AS USSR)

Card 2/3

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33094

Study of capture reactions ...

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B104/B138

Table. Measurement results.

Legend: (1) Reaction, (2)  $\sigma(\theta) \cdot 10^{27}$ ,  $\text{cm}^2/\text{sterad}$ , (3)  $Q$ , Mev, (4)  $\theta$  - angle at which the energy spectrum of the reaction products was taken, (a) authors' data, (b) data obtained by F. L. Ribe (Phys. Rev., 106, 769, 1957).

Тип реакции	(1)		(2)		(3)		(4)		Ip	
	$\sigma(\theta) \cdot 10^{27}$ $\text{cm}^2/\text{sterad}$		$Q, \text{Mev}$		$\theta$		$\theta$			
	наши дан- ные	рабо- та [10]	наши данни- е	рабо- та [10]	наши данни- е	рабо- та [10]	наши данни- е	рабо- та [10]		
$\text{P}^{18}(n, d) \text{O}^{18}$	26,2	24	$-5,9 \pm 0,08$	$-5,79 \pm 0,08$	0,039	0,036			S	
$\text{P}^{31}(n, d) \text{Si}^{30}$	32,5	—	$-5,2 \pm 0,2$	—	0,051	—			S	
$\text{S}^{33,34}(n, d) \text{P}^{31,33}$	—	—	$-7,7 \pm 0,1$	—	—	—	—	—	S	
$\text{S}^{33,34}(n, d) \text{P}^{31,33}$	—	—	$-10,1 \pm 0,1$	—	—	—	—	—	S	

Card 3/3

X

VELYUKHOV, G. YE., CAND PHYS-MATH SCI, "INVESTIGATION  
OF ~~NUCLEAR~~ STATE<sup>s</sup> <sup>of</sup> ~~NUCLEAR~~  $F^{19}$ ,  $NE^{20}$ ,  $P^{31}$ , AND  $S^{32}$  IN REAC-  
TIONS OF <sup>the</sup> ~~PICKUP~~ <sup>type</sup> ( $N, D$ ). LENINORAD, 1960. (ACAD SCI  
USSR, RADIUM INST IM V. G. KLOPIN). (KL, 3-61, 202).

Velyukhov, G.Ye.

S/166/60/000/03/04/011  
C111/C222

AUTHORS: Velyukhov, G.Ye., Prokof'yev, A.N., Academician AS Uz SSR, and  
Starodubtsev, S.V.

TITLE: A Method for Identifying Charged Particles From Reactions With Quick  
Neutrons 79

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matemati-  
cheskikh nauk, 1960, No. 3, pp. 24 - 31

TEXT: For the investigation of the nuclear reactions (n,p), (n,d), (n, $\alpha$ )  
the charged particles appearing during the configuration interaction must be  
identified ; that leads to several difficulties. The authors propose a method  
basing on the measurement of

$E \cdot \frac{dE}{dx}$  while usually  $\frac{dE}{dx}$  is measured. The  
proposed method permits to identify dependably the charged particles in a  
large energy interval. The scheme of devices used for the application of the  
method is described in detail.

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Card 1/2

A Method for Identifying Charged Particles  
From Reactions With Quick Neutrons

S/166/60/000/03/04/011  
C111/C222

There are 4 figures and 1 non-Soviet reference.

ASSOCIATION: Leningradskiy fiziko-tehnicheskiy institut AN SSSR  
(Leningrad Physical-Technical Institute AS USSR)

Institut yadernoy fiziki AN Uz. SSR  
(Institute of Nuclear Physics AS Uz SSR)

SUBMITTED: November 10, 1959

VB

Card 2/2

VELYUKHOV, G.Ye.; PROKOF'YEV, A.N.

Neutron-neutron scattering. Izv. AN SSSR. Ser. fiz. 26 no.3:  
1113-1115 Ag '62. (MIRA 15:11)

1. Fiziko-tehnicheskiy institut imeni A.F.Ioffe AN SSSR.  
(Neutrons--Scattering)

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5"

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5

T-TE. The above heat-removal techniques made possible new cooling systems.

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5"

84961

S/056/60/039/003/047/058/XX  
3006/B070

24,600

AUTHORS:

Velyukhev, G. Ye., Prokof'yev, A. N., Starodubtsev, S. V.

TITLE:

Capture Reaction on  $F^{19}_{-1/2}$ ,  $P^{31}_{-1/2}$ , and  $S^{32}_{-1/2}$  NucleiPERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki. 1960,  
Vol. 39, No. 3(9), pp. 563 - 565TEXT: The authors had established in Ref. 1 that the differential cross sections of the reactions  $F^{19}(n,d)O^{18}$  and  $P^{31}(n,d)Si^{30}$  coincide if the transitions to the ground levels of  $O^{18}$  and  $Si^{30}$  take place at  $E_n = 14.1$  Mev. If it is assumed that this is due to the last protons of $F^{19}$  and  $P^{31}$  being in the same state, a similar result should be expected for the reactions  $Ne^{20}(n,d)F^{19}$  and  $S^{32}(n,d)P^{31}$ , since also in this case the last protons of  $Ne^{20}$  and  $S^{32}$  are in the same state ( $2S_{1/2}$ ). To clear up this, the authors studied simultaneously the (n,d) reactions on  $F^{19}$ ,

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Capture Reaction on  $F^{19}$ ,  $P^{31}$ , and  $S^{32}$   
Nuclei

S/056/60/039/003/047/058/XX  
BC06/B070

$P^{31}$ , and  $S^{32}$ . For this purpose a new method was used, which is described in Ref. 1, and which makes possible a better separation of the deuteron group. The reaction  $S^{32}(n,d)P^{31}$  was investigated on a target with natural isotopic composition and the deuteron energy spectrum determined. Fig. 1 shows this for an angle of emission of  $0^\circ$  in the laboratory system.  $Q$  was found to be equal to  $(-7.7 \pm 0.1)$  Mev, and the differential cross section at  $0^\circ$  was  $(20.4 \pm 1.5) \cdot 10^{-27} \text{ cm}^2/\text{steradian}$ . The differential cross section of the reaction  $F^{19}(n,d)O^{18}$  at  $0^\circ$  was found to be  $(21.4 \pm 1.1) \cdot 10^{-27} \text{ cm}^2/\text{steradian}$ , and  $Q = (-5.9 \pm 0.3)$  Mev. The cross section of the reaction  $S^{32}(n,d)P^{31}$  was found to be  $(21.8 \pm 1.2) \cdot 10^{-27} \text{ cm}^2$ , and  $Q = (-5.2 \pm 0.2)$  Mev. The deuteron angular distributions of these three reactions for  $0^\circ$ - $30^\circ$  are shown in Fig. 2. The reaction cross sections decrease rapidly with increasing angles. Finally, the authors discuss a calculation of the reduced transition widths according to Butler's theory. The angular distributions calculated theoretically agree with the experimental results for all of the three reactions at an interaction

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Capture Reaction on F<sup>19</sup>, P<sup>31</sup>, and S<sup>32</sup>  
Nuclei

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B006/B070

radius of  $5.1 \cdot 10^{-13}$  cm. The authors thank A. P. Pulin and A. M. Tsvetkov  
for assistance. There are 2 figures and 3 references: 1 Soviet, 1 US,  
and 1 British.

ASSOCIATION: Leningradskiy Fiziko-tehnicheskiy institut Akademii  
nauk SSSR (Leningrad Institute of Physics and Technology  
of the Academy of Sciences USSR)

SUBMITTED: April 16, 1960

X

Card 3/3

21(5)  
AUTHORS:Velyukhov, G. Ye., Prokof'yev, A. B., Starodubtsev, S. V.,  
Academician of the UzbSSR

SOV/20-127-4-14/60

TITLE:

Investigation of the Reactions  $F^{19}(n,d)O^{18}$  and  $P^{31}(n,d)S^{30}$  at  
a Neutron Energy of 14.1 Mev

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 4, pp 781-783  
(USSR)

ABSTRACT:

The present paper investigates the pick-up reaction  $(n,d)$  proceeding without the formation of a compound nucleus of the reactions mentioned in the title. The reaction  $T(d,n)He^4$  was used as a neutron source at deuteron energies of 260 kev. A proportional counter was used as a monitor; the absolute measurement was carried out with the  $\alpha$ -particles originating from the source reaction and recorded by means of a scintillation counter with  $CsJ(Tl)$ -crystal. A telescope consisting of two proportional scintillation counters was used for investigating the reaction products; the telescope was placed in the same chamber as the reaction target. One of the proportional counters was used for measuring the losses, the other one for determining the reaction energy which made it

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Investigation of the Reactions  $F^{19}(n,d)O^{18}$  and  
 $P^{31}(n,d)Si^{30}$  at a Neutron Energy of 14.1 Mev

SOV/20-127-4-14/60

possible to determine these two factors at the same time. The results on the reaction energies agreed with those found by Wolfe et al (Ref 6). The differences in the energy losses for protons and neutrons of the same energy amounted to  $\sim 75\%$ . Therefore, both particles could be reliably identified. The angular distribution of the secondary particles was determined from the change in the angle between the telescope axis and the direction in which the neutrons escaped. The background was determined under all angles under which the investigations were carried out. The energy spectra of the deuterons of the two reactions for the angle  $\theta=0$  are indicated in figures 1 and 2. Figure 3 shows the energy spectra of the deuterons of both reactions under  $\theta = 20^\circ$ , and figure 4 the deuteron angular distribution of both reactions (transition into the ground state); besides the experimentally determined values, all diagrams also contain the theoretical curves (Butler et al.).

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Investigation of the Reactions  $F^{19}(n,d)O^{18}$  and  
 $P^{31}(n,d)Si^{30}$  at a Neutron Energy of 14.1 Mev

SOV/20-127-4-14/60

The value  $-5.9 \pm 0.3$  Mev was obtained for the Q of the first reaction, and  $Q = -5.2 \pm 0.2$  Mev was found for the second reaction. In the first case, besides the transition into the ground state, transitions to higher energy levels take place. The angular distribution was in good agreement with the theoretical values found by Butler (Ref 9). Finally, the authors thank A. P. Pulin and A. M. Tsvetkov for their assistance in the experiment. There are 4 figures and 12 references.

ASSOCIATION: Fiziko-tehnicheskiy institut Akademii nauk SSSR (Institute of Physics and Technology of the Academy of Sciences, USSR)

SUBMITTED: May 23, 1959

Card 3/3

VELYUKHOV, G.Ye.; PROKOF'YEV, A.N.; STARODUBTSEV, S.V., akademik

Method of identification of charged particles from reactions with  
fast neutrons. Izv.AN Uz.SSR.Ser.fiz.-mat.nauk no.3:24-31 '60.  
(MIRA 13:8)

1. Leningradskiy fiziko-tehnicheskiy institut AN SSSR i Institut  
yadernoy fiziki AN UzSSR. 2. AN UzSSR (for Starodubtsev).

(Neutrons)  
(Nuclear reactions)  
(Particles (Nuclear physics))

10105  
S/048/62/026/008/028/028  
B181/B102

24,6500

AUTHORS: Velyukhov, G. Ye., and Prokof'yev, A. N.

TITLE: Scattering of neutrons on neutrons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,  
no. 8, 1962, 1113 - 1115

TEXT: In theoretical papers (K. M. Watson, Phys. Rev., 88, 1163 (1952);  
V. V. Komarov, A. M. Popova, Zh. eksperim. i teor. fiz., 38, 1559 (1960))  
it was suggested that the interaction of neutrons should be investigated  
in nuclear reactions such as  $d+n \rightarrow p+2n$ , the final product of which contains  
two interacting neutrons in the singlet state with a low energy with  
respect to the center-of-mass system. A target of deuterium polyethylene  
based on tantalum was bombarded with 14.1-Mev neutrons from the reaction  
 $T+d \rightarrow \alpha+n$ . The theoretical maximum energy  $E_p^m$  of the resulting protons is  
11.8 Mev. According to Refs. 2 and 3, the neutron interaction leads to a  
maximum of the proton energy distribution at  $E_p^m$ , which is given by

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Scattering of neutrons...

S/048/62/026/008/028/028  
B181/B102

$$f(E_p) \sim \frac{\sqrt{E_p^m - E_p}}{E_p^m - E_p + 2/3\epsilon}$$
, where  $\epsilon$  is the interaction energy. The true

principal maximum of the proton energy spectrum recorded in the direction of the primary neutrons is found at  $11.7 \pm 0.2$  Mev. The maximum occurring at 14.1 Mev is due to elastic collisions with the 5% hydrogen in the target. Because of losses in the target and the counters the principal maximum is, however, so indistinct that the interaction energy of neutrons in the singlet state cannot be exactly determined. However, the experiment shows that the reaction under consideration can be used to determine the interaction parameters of two neutrons. There are 2 figures. J

ASSOCIATION: Fiziko-tehnicheskiy institut im. A. F. Ioffe AN SSSR  
(Physicotechnical Institute im. A. F. Ioffe AS USSR)

Card 2/2

KORZH, P.D.; VELYUS, L.M.

Lead determination by the absorption of radioactive rays in  
lead ore concentration products. Izv. vys. ucheb. zav.; tavet.  
met. 5 no.6:35-40 '62. (MIRA 16:6)

1. Magnitogorskiy gornometallurgicheskiy institut, kafedra  
fiziki.

(Lead ores—Analysis)  
(Radioisotopes—Industrial applications)

VELIUS, L.N.; USTINOV, A.M.

Radioisotopic determination of lead in lead production  
materials. Sbor. trud. VNIITSVETMET no.9:132-135 '65.  
(MIRA 18:11)

VILAYEV, L.M.; KORZH, F.D.

Selecting the optimal parameters for the radioradiometric determination of lead in beneficiation products. Izv. vys. ucheb. zav.;  
tsvet. met. 7 no. 4:39-46 '64 (MIRA 19:1)

1. Magnitogorskiy gornometallurgicheskiy institut, kafedra  
fiziki.

SCV/51-7-3-6/21

AUTHORS: Cherkasov, A.S. and Yakber, T.M.

TITLE: On the Effect of n-Toluidine on the Quantum Yields of Photo-Oxidation and Photo-Dimerization of Certain Anthracene Derivatives.

JOURNAL: Optika i spektroskopiya, 1958, Vol 7, Nr 3, pp 321-325 (USSR)

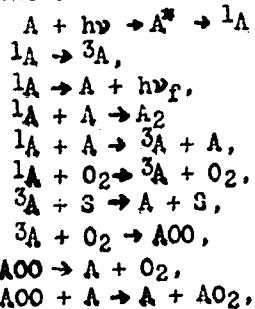
ABSTRACT: The authors studied the effect of n-toluidine (which quenches fluorescence) on the quantum yields of fluorescence, photo-oxidation and photo-dimerization of 9-methyl-10-methoxymethylanthracene (I), which forms only a photo-oxide, and 9-methylanthracene (II), which forms only a photo-dimer in oxygen-free solutions. The experimental technique was the same as used earlier (Ref 3). The values of the quantum yields of fluorescence, photo-oxidation and photo-dimerization of the substances I and II obtained at various concentrations of n-toluidine are shown in Figs 2 and 3. Figs 2a, 2b and 3 show that n-toluidine quenches strongly fluorescence of alcohol solutions of I and II. In the range of concentrations used the reciprocal of the quantum yield of fluorescence is proportional to the concentration of n-toluidine. The quantum yields of the photo-chemical reactions are also reduced in the presence of n-toluidine, photo-oxidation being affected more strongly. For example, the quantum yield of photo-dimerization of the substance II, present in an oxygen-free solution to the extent of  $6 \times 10^{-3}$  mole/litre, was 0.12 in

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SOV/51-7-3-6/21

## On the Effect of n-Toluidine on the Quantum Yields of Photo-Oxidation and Photo-Dimerization of Certain Anthracene Derivatives.

the absence of n-toluidine and 0.05 when  $3 \times 10^{-2}$  mole/litre of n-toluidine was added to the solution. The quantum yield of photo-oxidation of the substance I present to the extent of  $6 \times 10^{-3}$  mole/litre in an air-saturated ethanol solution, falls from 0.16 in the absence of n-toluidine to 0.015 when  $3 \times 10^{-2}$  mole/litre of n-toluidine was present. The authors compared the results obtained with a scheme which shows the successive stages of the photo-chemical reactions (Refs 1, 2). This scheme runs as follows:



Card 2/4

SOV/51-7-3-6/21

## On the Effect of n-Toluidine on the Quantum Yields of Photo-Oxidation and Photo-Dimerization of Certain Anthracene Derivatives

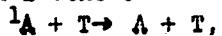
where  $A$ ,  $A^*$ ,  $1A$ ,  $3A$  represent molecules which are non-excited, initially excited and excited into singlet and triplet states, respectively;  $S$  represents a molecule of the solvent;  $O_2$  are oxygen molecules;  $A_2$  are photo-dimer molecules;  $AO$  is an intermediate photo-oxide;  $AO_2$  are photo-oxide molecules. From the above scheme it follows that a decrease in the quantum yield of photo-dimerization should be proportional to a decrease in the quantum yield of fluorescence in the case of deactivation of the excited molecules by an external quenching agent. Fig 3 shows that the results obtained for photo-dimerization of II agree well with this prediction. The quantum yields of photo-oxidation of I are, however, smaller (Fig 2) than those predicted on the basis of the scheme given above. It is shown that to make the theory agree with the experimental data it is necessary to assume that the quenching agent interacts with molecules excited to the singlet state, deactivates them completely and it also decomposes the intermediate photo-oxide producing

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SOV/51-7-3-6/21

On the Effect of n-Toluidine on the Quantum Yields of Photo-Oxidation and Photo-Dimerization  
of Certain Anthracene Derivatives

the original substance A. This can be represented by the following  
additional scheme:



$AOO + T \rightarrow A + TOO$ , where T is the quenching agent.

There are 4 figures, 1 table and 5 references, 3 of which are Soviet,  
1 English and 1 French.

SUBMITTED: December 4, 1958

Card 4/4

VEMBER, T.M.; CHERKASOV, A.S..

Effect of certain fluorescence quenchers on quantum yields  
of photochemical transformations of 9-methylanthracene and  
9-methyl-10-methoxymethylanthracene. Izv.AN SSSR.Ser.fiz.  
24 no.5:577-581 My '60. (MIRA 13:5)  
(Anthracene) (Fluorescence)

CHERKASOV, A.S.; VEMBER, T.M.

Absorption and luminescence of the mesoderivatives of anthracene  
with oxygen containing substitutes. Opt.i spektr. 1 no.5:663-671  
(MLRA 9:11)  
S '56.  
(Anthracene--Spectra)

VERBER, T.M.; CHERKASOV, A.S.

Mutual effect of some 9-monoderivatives of anthracene on quantum yield of their photochemical conversions and on quantum yield of fluorescence. Opt. i spektr. 6 no.2:232-234 F '59.  
(MIRA 12:4)

(Anthracene)

(Fluorescence--Spectra)

VERNER, T.M.

Mechanism of the effect of aromatic amines on the  
fluorescence and photochemical oxidation of anthracene  
compounds. Dokl. AN SSSR 147 no.1:123-126 N '62. (MIRA 15:11)

1. Predstavлено академиком A.N. Tereninym.  
(Anthracene) (Fluorescence) (Amines)

CHERKASOV, A.S.; VEMBER, T.M.

Effect of p-toluidine on the quantum yields of photooxidation  
and photodimerization of some anthracene derivatives. Opt. i  
spektr. 7 no.3:321-325 S '59. (MIRA 13:3)  
(Anthracene) (Photochemistry) (Toluidine)

CHERKASOV, A.S.; VEMBER, T.M.

**E**ffect of oxygen on photochemical conversions and concentration  
quenching of the fluorescence of some anthracene derivatives.  
Opt. i spektr 6 no.4:503-511 Ap '59. (MiRA 12:5)  
(Anthracene) (Oxygen) (Fluorescence)

CHERKASOV, A.S.; VEMEER, T.M.

Kinetics of photochemical transformations and concentration  
quenching of fluorescence of 9-monoalkylsubstituted anthracene.  
Opt. i spektr. 4 no.2:203 F '58. (MIRA 11:4)

1.Gosudarstvennyy opticheskiy institut im. S.I. Vavilova.  
(Anthracene) (Fluorescence) (Photochemistry)

SOV/51-6-2-17/39

AUTHORS: Venober, T.M. and Cherkasov, A.S.

TITLE: On Mutual Influence of Certain 9-Monoderivatives of Anthracene on Quantum Yields of Their Photochemical Transformations and on Quantum Yields of Fluorescence (O vzaimnom vliyanii nekotorykh 9-monoproizvodnykh antratsena na kvantovyye vykhody ikh fotokhimicheskikh prevrashcheniy i kvantovyye vykhody fluorestentsii)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 2, pp 232-234 (USSR)

ABSTRACT: The authors reported earlier (Refs 1, 2) that monomeric alkyl derivatives of anthracene undergo photochemical reactions in solution, producing, in the presence of oxygen, two stable products: a photo-oxide and a photo-dimer. The authors also reported that increase of the concentration of the anthracene derivatives in solution increases the quantum yields of the photochemical reactions and decreases the quantum yield of fluorescence. The present paper deals with the situation when two or more anthracene derivatives are present in a solution. The question was whether (i) any one compound would behave simply as a foreign absorbing impurity or whether (ii) a mutual influence of one compound on another would be observed. The quantum yields of photo-oxidation,

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SOV/51-6-2-17/39

On Mutual Influence of Certain 9-Monoderivatives of Anthracene on Quantum Yields  
of Their Photochemical Transformations and on Quantum Yields of Fluorescence

photo-dimerization and fluorescence were determined for alcohol solution of the following mixtures: (1)  $3 \times 10^{-3}$  mole/litre of 9-methylanthracene (MeA) and  $3 \times 10^{-3}$  mole/litre of 9-ethylanthracene (EtA); (2)  $6 \times 10^{-3}$  mole/litre of MeA and  $6 \times 10^{-3}$  mole/litre of EtA; (3)  $3 \times 10^{-3}$  mole/litre MeA,  $3 \times 10^{-3}$  mole/litre EtA and  $3 \times 10^{-3}$  mole/litre 9-n-propylanthracene (PrA); (4)  $6 \times 10^{-3}$  mole/litre MeA,  $6 \times 10^{-3}$  mole/litre EtA and  $6 \times 10^{-3}$  mole/litre PrA; (5)  $3 \times 10^{-3}$  mole/litre MeA and  $9 \times 10^{-3}$  mole/litre 9-icetoxyanthracene (AcA); (6)  $6 \times 10^{-3}$  mole/litre MeA and  $6 \times 10^{-3}$  mole/litre AcA; (7)  $6 \times 10^{-3}$  mole/litre MeA and  $3 \times 10^{-3}$  mole/litre AcA. These solutions were illuminated with light of 365 nm wavelength. At the concentrations used all incident light was absorbed in the solutions. These experiments were carried out at 20°C; they are described in greater detail by the authors in Ref 1. The experimental values of the quantum yields of photo-oxidation ( $\varphi_{\text{p}}$ ), photo-dimerization ( $\varphi_{\text{d}}$ ) and fluorescence (B) obtained by the authors are given in a table on p 233. This table quotes also the values of the three quantum yields calculated assuming either conditions (i) or

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On Mutual Influence of Certain 9-Monoderivatives of Anthracene on Quantum Yields  
of Their Photochemical Transformations and on Quantum Yields of Fluorescence

SOV/51-6-2-17/39

(ii). The data given in the table show clearly that, when more than one anthracene derivative is present in an alcohol solution, the quantum yields of the photochemical reactions increase and the quantum yield of fluorescence decreases, i.e. addition of one of these compounds to a solution is equivalent to increase of concentration of the original solute. This behaviour is due to formation of mixed dimers consisting of molecules of two different compounds, as well as dimers consisting of two identical molecules. A similar interaction between molecules of different substances and between molecules of the same substance is observed in the fluorescence spectrum. In concentrated solutions of mixtures of anthracene derivatives a new fluorescence band (shown in a figure on p 233) appears, similar to a band which appears in single-component concentrated solutions. There are 1 table, 1 figure and 4 references, 3 of which are Soviet and 1 German.

SUMMITTED: May 12, 1958

Card 3/3

L 01268-66 EWT(1)/S-T(m)/EPF(c)/EXP(j)/T IJP(c) 1391

ACCESSION NR: AP5020806

UR/0048/65/029/308/1391/1193

AUTHOR: Vember, T. M.

TITLE: Investigation of the kinetic scheme of photochemical transformation of anthracene compounds in solutions [Report, 13th Conference on Luminescence held in Khar'kov 25 June to 1 July 1964]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1391-1393

TOPIC TAGS: anthracene, solution property, luminescence, luminescence quenching, photochemistry, oxidation kinetics

ABSTRACT: This short paper is devoted to a discussion of experimental data in the literature (in the accumulation of many of which the author participated) concerning fluorescence and photo-oxidation of anthracene compounds in solution. The principal theses that the author defends in this discussion are that excited triplet molecules participate in the photo-oxidation, and that triplet molecules are formed in the course of concentration quenching of the luminescence. Among the experimental facts adduced in support of these theses are the following: The quantum fluorescence efficiency of 9-methyl-10-methoxymethylanthracene in alcohol solution depends less strongly on the oxygen concentration than does the quantum

Card 1/2

L 01268-66

ACCESSION NR: AP5020806

yield of photo-oxidation. Potassium iodide quenches the fluorescence of anthracene compounds much more strongly than it depresses the photo-oxidation yield, and carbon disulfide, which strongly quenches the fluorescence, actually increases the quantum yield in photo-oxidation of 9,10-di- $\alpha$ -propylanthracene. The ratio of the quantum yield of fluorescence to that of photo-oxidation in the presence of a quenching agent depends linearly on the concentration of the latter. Experimental data on photo-oxidation and luminescence quenching by oxygen in 9-methyl-10-methoxymethylanthracene indicate that the process of concentration quenching of the fluorescence involves excitation of triplet states. The author closes by noting that there are many data which indicate that excited dimers (excimers) are formed in the concentration quenching of the fluorescence of complex organic compounds, and that Th. Förster (Pure and Appl. Chem., 4, 121, 1962) has concluded that the excited dimers are deactivated by transition to the triplet state and subsequent decomposition into a triplet monomer molecule and a monomer molecule in the ground state. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: OP, GC

NO REF Sov: 006

OTHER: 007

Card 2/2 my.

VEMBER, T.M.; KIYANSKAYA, L.A.; CHERKASOV, A.S.

Relative rates of the photochemical transformations of anthracene derivatives. Zhur. ob. khim. 33 no.7:2342-2347 J1 '63.  
(MIRA 16:8)  
(Anthracene) (Photochemistry)

24(7), 5(4)

AUTHORS: Cherkasov, A.S. and Vember, T.M.

SOV/51-6-4-15/29

TITLE: On the Effect of Oxygen on Photochemical Transformations and on Concentration Quenching of Fluorescence in Certain Derivatives of Anthracene (O vliyanii kisloroda na fotokhimicheskiye prevrashcheniya i kontsentratsionnoye tusheniye fluorescentsii nekotorykh proizvodnykh antratsena)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 4, pp 503-511 (USSR)

ABSTRACT: The authors showed earlier (Ref 1) that concentration quenching of fluorescence of mesomonoalkyl derivatives of anthracene is due to interaction of excited molecules with non-excited ones, as a result of which stable photo-dimers may be formed. In order to study further the processes of absorption of light energy by such substances, the authors investigated the effect of oxygen on the quantum yields of fluorescence and the quantum yields of photo-dimerization and photo-oxidation to 9-methylanthracene, 9-ethylanthracene, 9-n-propylanthracene and 9-methyl-10-methoxymethylanthracene. The experiments were carried out at 20°C. Ethyl alcohol was used as the solvent. The solutions were illuminated with light from a mercury lamp SVU-120 of wavelength ~365 nm.

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SOV/51-6-4-15/29  
On the Effect of Oxygen on Photochemical Transformations and on Concentration  
Quenching of Fluorescence in Certain Derivatives of Anthracene

Various amounts of oxygen were introduced into the solutions by saturating them with oxygen, air or a mixture of oxygen and nitrogen at atmospheric pressure. Oxygen was removed from the solutions by blowing of pure nitrogen through them, boiling and eventual cooling or by pumping air out of them (after freezing the solutions with liquid air). The monoalkyl derivatives of anthracene in alcohol solutions form simultaneously photo-oxides and photo-dimers in the presence of oxygen and under the action of light. In contrast to these compounds, 9-methyl-10-methoxymethylanthracene forms only a photo-oxide. On increase of concentration of the studied substances the quantum yield of fluorescence decreases and the quantum yields of photo-dimerization and photo-oxidation increase. The values of the experimentally determined quantum yields of fluorescence ( $\Phi_f$ ) and of photo-oxidation ( $\Phi_p$ ) and photo-dimerization ( $\Phi_d$ ), on various concentrations of the studied substances ( $[A]$ ) and oxygen ( $[O_2]$ ) are given in Table 1. This table shows that oxygen quenches fluorescence whose yield falls with increase of the amount of oxygen in solutions. The oxygen quenching effect decreases on increase of concentration of the studied substance and the concentration quenching decreases on increase of the amount of dissolved

Card 2/4

SOV/51-8-4-15/29

On the Effect of Oxygen on Photochemical Transformations and on Concentration  
Quenching of Fluorescence in Certain Derivatives of Anthracene

oxygen. This suggests that the two processes compete with one another. Dependence of the reciprocals of the quantum yields of fluorescence on the concentration of oxygen (Fig 1a) and on the concentration of the substance (Fig 1) are very nearly straight lines, which suggests a diffusion nature of these two quenching processes. The authors explain the results as follows. The solute molecules excited by photons interact with the solvent and become singlet-excited or triplet-excited molecules. The singlet-excited molecules are de-excited by photon emission (i.e. fluorescence) or by interaction with non-excited solute molecules (concentration quenching of fluorescence) to form photo-dimers. Alternately, the singlet-excited molecules may interact with O<sub>2</sub> (oxygen quenching of fluorescence) or with non-excited solute molecules (concentration quenching of fluorescence) to form triplet-excited molecules. The triplet-excited molecules interact with O<sub>2</sub> to produce photo-oxides. The above scheme is confirmed by the agreement between the theoretical (continuous) curves deduced from this scheme and the experimental points (dots, crosses, circles and triangles) shown in Figs 2 and 3.

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SOV/51-6-4-15/29

On the Effect of Oxygen on Photochemical Transformations and on Concentration  
Quenching of Fluorescence in Certain Derivatives of Anthracene

Fig 2 gives the dependence of the quantum yield of fluorescence on the concentration of the substance. Fig 3a gives the quantum yield of photo-oxidation of 9-methyl-10-methoxymethylanthracene on the amount of oxygen. Fig 3b gives the dependence of the quantum yields of photo-oxidation and photo-dimerization on the concentration of the substance. There are 3 figures, 2 tables and 15 references, 6 of which are Soviet, 3 German and 6 English.

SUBMITTED: April 2, 1958

Card 4/4

VEMBER, T.M.; CHERKASOV, A.S.

Effect of  $\rho$ -toluidine and potassium iodide on the fluorescence  
and photooxidation of 9,10-di-n-propylanthracene. Opt. i spektr. 10  
no.4:544-546 Ap '61. (MIRA 14:3)  
(Anthracene) (Toluidine)  
(Potassium iodine)

T. M. VEMBER

B-4

USSR/Physical Chemistry - Molecule, Chemical Bond.

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 95

Author : A.S., Cherkasov, T.M. Vember.

Inst : -  
Title : Absorption and Luminescence of Mesoderivatives of Anthracene with Oxygen Containing Substitutes.

Orig Pub : Optika i spektroskopiya, 1956, 1, No 5, 663-671

Abstract : The ultraviolet absorption spectra (AS) and fluorescence spectra (FS) of solutions of anthracene, 9-acetylanthracene, 9-benzoylanthracene, 9-anthracenecarboxylic acid, 9-acetoxyanthracene, 9-metoxyanthracene, 9-chloro-10-anthracenecarboxylic acid, 9-bromo-10-anthracenecarboxylic acid, 9, 10-diacetoxyanthracene, 9,10,-dimetoxyanthracene, 9-methyl-10-metoxyanthracene, 9-chloro-10-metoxyanthracene and 9-bromo-10-metoxyanthracene in ethyl alcohol were studied. The absorption spectra have the appearance characteristic of anthracene. The influence of substitutes

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B-4

USSR/Physical Chemistry - Molecule, Chemical Bond.

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 95

is expressed in a certain diffusion of the vibration structure of the long-wave band and in the shift of spectra to the lower frequency side. The fluorescence spectra are more sensitive of substitutes. The diffusion of the vibration structure of bands is the greatest, if there were no steric hindrances for the rotation of the substitutes. It is obvious that the position of the substitute with reference to the ring in such a case is such that its interaction with the ring is the greatest. The shift of AS and FS of di-replaced anthracene is approximately equal to the sum of shifts caused by each substitute separately. The introduction of electron-acceptor substitutes ( $\text{CH}_3\text{CO}$ ,  $\text{C}_6\text{H}_5\text{CO}$ ,  $\text{COOH}$ ) results in a complete or nearly complete disappearance of fluorescence. Substitutes of the electron-donor character decrease the fluorescence emission considerably less. As compared with the

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USSR/Physical Chemistry - Molecule, Chemical Bond.

B-4

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 95

monoderivatives, the fluorescence emission of diderivatives is greater as a rule, if both the substitutes were of the same type with reference to their influence on the distribution of electrons in the anthracene nucleus. The oscillator forces were computed for all compounds. See also RZhKhim, 1956, 53634.

Card 3/3

USSR/Physical Chemistry, Photo Chemistry, Radiation Chemistry,  
Theory of Photographic Process. B-10

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22450.

Forster (Forster T. Fluoreszenz organischer Verbindungen, Gottingen 1951, S.158) than by usual formula of Kravz-Einstein.  $\tau_a$  and  $\tau_{e,n}$  ( $\eta$  concords well in case of derivatives at which  $\eta$  is greater than at  $\Lambda$ ). The diminishing of the value of  $\tau$ ,  $\tau_{e,n} > \tau_a$  in case of substitutes is explained in this case by the presence of damping, not related to the decrease of  $\tau$ .

Card 2/2

-152-

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859320017-5"

L 24267-66 ENT(1)/ENT(m)/EMP(1) IIP(1) DS/PM  
ACC NR: AP6007014

SOURCE CODE: UR/0051/66/020/002/0347/0349

4/4

42

B

AUTHOR: Vember, T. M.

ORG: none

TITLE: Quenching of the fluorescence of mesodisubstituted anthracene derivatives by anthracene, and the formation of mixed photodimers

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 347-349

TOPIC TAGS: anthracene, photochemistry, fluorescence quenching, absorption band, light excitation, nonmetallic organic derivative, quantum yield

ABSTRACT: This is a continuation of earlier work by the author (with A. S. Cherkasov, Opt. i spektr. v. 6, 323, 1959) dealing with the mutual fluorescence quenching and the mixed dimers which occur when solutions of mixtures of several anthracene derivatives are irradiated in the region of their absorption bands. To check whether fluorescence quenching of the derivatives and formation of mixed photodimers might also occur when anthracene molecules interact with excited molecules of their meso-disubstituted derivatives, the author studied two mixtures, anthracene and 9,10-di-n-propyl-anthracene, and anthracene and 9-methyl-10-methoxymethyl-anthracene. Excitation was with the 405 nm line from a mercury vapor lamp. The quantum yield was determined as a function of the anthracene concentration. The measurements showed that as the concentration of the anthracene in the solution increased, the fluorescence quantum yield of the mesodisubstituted derivative decreased so that the reciprocal quantum yield was a linear function of the anthracene concentration. The

UDC: 535.370 + 535.217

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ACC NO. AF6007014

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rate constants of the fluorescence quenching of the mesodisubstituted anthracene were found to be  $2.1$  and  $6.0 \times 10^9$  liter-mole $^{-1}$  sec $^{-1}$  for the 9,10-di-n-propyl-anthracene and 9-methyl-10-methoxymethyl-anthracene, respectively. The quantum yields of the photochemical reactions were determined and were found to be 0.05 for I and 0.08 for II, containing anthracene at a concentration of  $10^{-2}$  mole/liter and the mesodisubstituted derivatives at a concentration of  $3 \times 10^{-3}$  mole/liter. The quantum yields for the fluorescence quenching of the mesodisubstituted derivatives by the anthracene for these solutions was 0.73 and 0.41 respectively. This shows that only about 20% of the quenching in the mesodisubstituted derivatives resulted in formation of stable

VELITSKIY, A.P. (Leningrad)

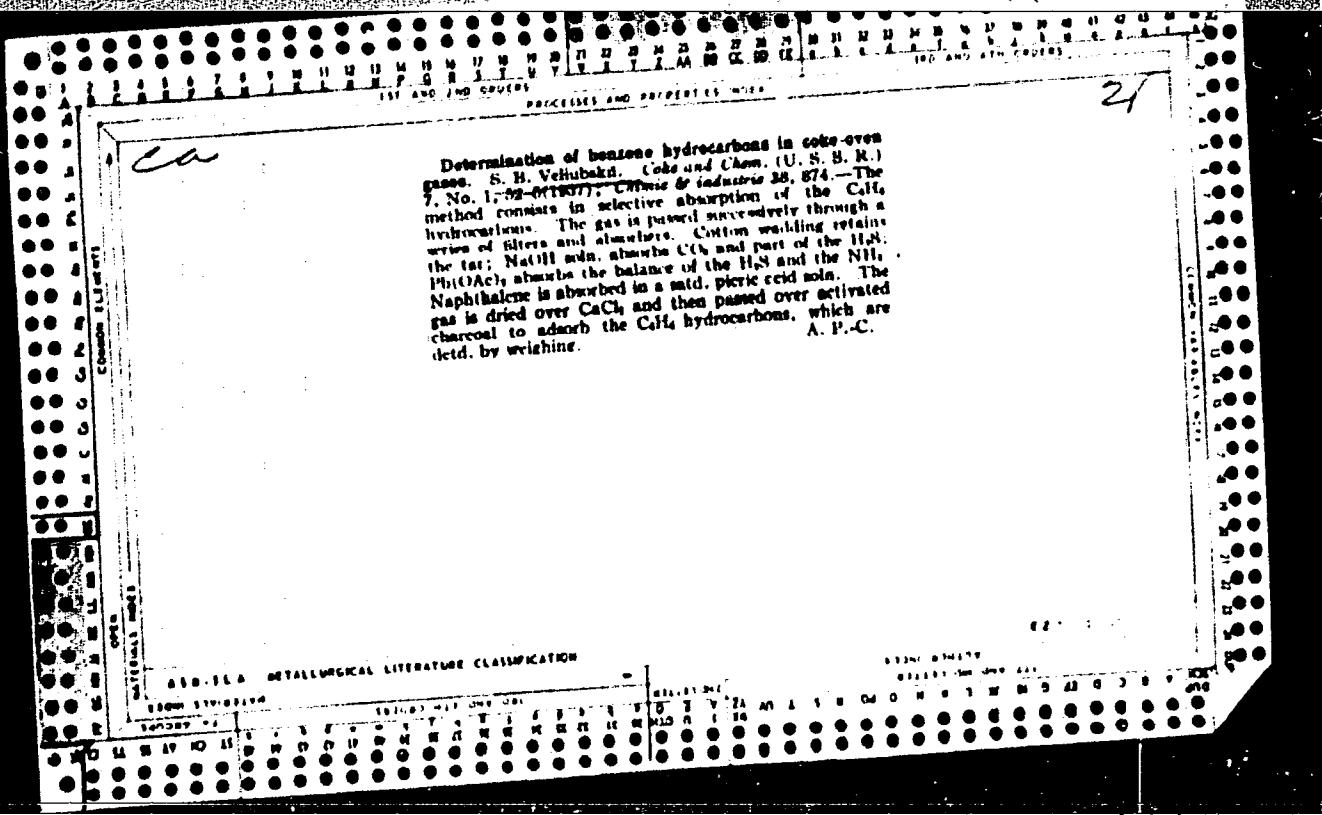
Effect of vitamin C content of blood and tonsillar tissue on  
hemorrhages following tonsillectomy. Vest. oto-rin. 16 no.4:62-64  
(MIR 7:8)

Jl-Ag '54.

(VITAMIN C, metabolism,  
\*relation to hemorrh. after tonsillectomy)

(TONSILS, surgery,  
\*postop. hemorrh., relation to vitamin C metab.)

(HEMORRHAGE,  
\*in tonsillectomy, relation to vitamin C metab.)



551.508.58

3.9-56

Venice, Yugoslavia. Jedan novi neformat-r. (A new Nephoscope.) Yugoslavia. Hidrometeorologiska Glushba. Hidrometeorologiski Glushba, 2(1/2): 27-43, 1949. 6 figs., 2 graphs, 29 equations. In addition, Yugoslav and French summaries. No. 19-41. Portability, simple operation and convenience are main advantages of the instrument, which is claimed to have an accuracy superior, for example, to that of Reason's nephoscope. The instrument is shown in a photo, its technical description given and its operation explained in detail. Equations are developed for calculating velocity and direction of the movement of clouds from nephoscope readings. The accuracy of the instrument is discussed with particular attention to the case in which clouds move in a nonhorizontal plane. Subject heading: 1. Nephoscopes.  
----G.T.

PA 162T91

VEMIC, M.

YUGOSLAVIA/Meteorology - Clouds 1949  
Meteorological Instruments

"A New Nephoscope," M. Vemic

"Hidrometeoroloski Glasnik" Vol II, No 1/2, pp 27-43

Describes new nephoscope distinguished by many advantages, e.g., portability, easy regulation, in comparison with previous instruments. Claims accuracy exceeds that of comb nephoscope.

FDD

162T91

VEMLOV, I. P.

PA 237T63

USSR/Geophysics - Isotherms

Dec 52

"Variation of the Thermal Field With Height," Cand  
Phys-Math Sci I.P. Vemlov, Moscow Central Inst of  
Forecasting

"Meteorol i Gidrol" No 12, pp 23-25

Discusses rules governing changes of direction and  
conc of isotherms with height, which changes are  
reduced to the horizontal surface, as a function  
of distribution of vertical temp gradients.

237T63

VEL'TMAN, R.P.; ZHUKOVSKIY, L.I.; PONOMAREV, L.Ye.; VEMYAN, A.Zh.;  
BENENSON, M.P.; ZALMANENOK, V.S.; KRUPENKO, T.I.; BABICH, Z.Ye.;  
GUTMAN, L.B.; ALIMOV, T.U.; YAKUNIN, P.N.; KRYZHANOVSKAYA, N.L.;  
AKSEL'DORF, A.L.; MUSINA, S.A.; KLEYF, A.D.; LUTSEVICH, F.V.;  
LEVINSON, O.S.; TURBINA, N.S.

Brief reports. Sov. med. 28 no.10:144-148 O '65.

1. Kiyevskiy institut tuberkuleza i grudnoy khirurgii (for  
Vel'tman, Zhukovskiy). 2. 3-ya kafedra khirurgii TSentral'nogo  
instituta usovershenstvovaniya vrachey, Moskva (for Ponomarev,  
Vemyan, Benenson). 3. Kafedra propedevticheskoy terapii  
Grodnenskogo meditsinskogo instituta i 1-ya klinicheskaya  
bol'nitsa imeni Solov'yeva, Grodno (for Zalmanenok, Krupenko).  
4. Ukrainskiy nauchno-issledovatel'skiy institut okhrany materinstva  
i detstva imeni Buyko, Kiyev (for Babich, Gutman).  
5. Klinika gospital'noy khirurgii Andizhanskogo meditsinskogo  
instituta (for Alimov). 6. Kafedra voyenno-nolevoy terapii  
(for Mitropol'skiy, Latysh, Murchakova). 7. Kafedra urologii  
I Moskovskogo ordena Lenina meditsinskogo instituta (for Aksel'dorf).  
8. 4-ya infektsionnaya klinicheskaya bol'nitsa Ufy (for Musina).  
9. Chernovitskaya detskaya oblastnaya klinicheskaya bol'nitsa  
(for Kleyf). 10. Klinika obshchey khirurgii lechebnogo fakul'teta  
I Moskovskogo meditsinskogo instituta imeni Sechenova i patologoan-  
atomiceskoye otdeleniye klinicheskoy bol'nitsy No.23 imeni  
Medsantrud, Moskva (for Lutsevich, Levinson). (Cont. next card)

VEL'TMAN, R.P.; (Continued) Card 2:

11. Gematologicheskaya klinika TSentral'nogo ordena Lenina  
instituta gematologii i perelivaniya krovi, Moskva (for Turbina).

VEN, Mihaly; SZANYI, Andras

Report by the Work Committee on Industrial Installations of the Hungarian Electrotechnical Association. Villamossg 13 no.4: 117-118 Ap '65.

1. Head, Work Committee on Industrial Installations of the Hungarian Electrotechnical Association (for Ven). 2. Secretary, Work Committee on Industrial Installations of the Hungarian Electrotechnical Association (for Szanyi).

VENBRIN, A.Z.; TITOV, P.S., prof.

Investigating the cathodic process during the electrodeposition  
of copper-lead alloys from pyrophosphate electrolytes. Izv. vys.  
ucheb. zav.; tsvet. met. 8 no.4:140-144 '65. (MIRA 18:9)

1. Kafedra korrozii metallov Moskovskogo instituta stali i splavov.

VENBRIN, A.Z.; TIOV, P.S.

Cyanide-tartrate electrolytes for the preparation of copper-  
lead alloys. Izv. vys. ucheb. zav. tsvet. met. 8 no. 3(65).  
157 '65. (MIRA 18:9)

1. Moskovskiy institut stali i splavov, kafedra keramiki i  
zashchity metallov.

VENCELJ, Mari

The library of subprograms of the Computing Center. Obz mat  
fiz 11 no.4:154-162 D '64.

VENCHIKOV, A.I.

Physiologically active concentrations of certain heavy metals and  
of iodine [with summary in English]. Farm. i toks. 21 no.4:90-93  
(MIRA 11:11)

1. Kafedra fiziologii Turkmenskogo meditsinskogo instituta imeni  
I.V. Stalina.

(METALS,

heavy metals, physiol. active concentrations (Rus))

(IODINE,

physiol. active concentration (Rus))

VENCHUGOV, N. I.

178T37

USR/ Electricity - Cables Books

Feb 91

"Review of I. I. Grodnev and B. F. Miller's Book 'Communications Cables,'" B. F. Ustin, K. A. Lyubimov, N. I. Venchugov, Eng. mers, State Sci Res Inst of Cable Ind.

"Elektrichestvo" No 2, pp 94, 95

Favorable review of subject book, in which are investigated the principles of communications cable theory, principles of their elec calculation and constr, and problems involving production technol of sym and coaxial cables. Special attention is given to the theory of influence in cable circuits, constr of coaxial cables, and shielding. Published by "Gosenergoizdat," 480 pp, R 15:65

178T37

VEMOLA, L., MUDr.

10 anniversary of the Svitavy general hospital. Cesk. zdrav.  
11 no.7/8:294-298 '63.

~~REDACTED~~  
(HOSPITALS)

VEMOLA, L., MUDr.

10 anniversary of the Svitavy general hospital. Cesk. zdrav.  
11 no.7/8:294-298 '63.

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(HOSPITALS)

VEMOIA, Leopold, MUDr.

Basic problems in ambulatory care. Cesk. zdravot. 6 no.2:65-72  
Mar 58.

(OUTPATIENT SERVICES,  
in Czech., basic issues (Cz))

VEMOLA, Leopold

Primary carcinoma in a diverticulum of the urinary bladder.  
Rozhl. chir. 38 no.10:712-715 0 '59.

1. Chirurgicke oddeleni OUNZ ve Svitavach, prednosta MUDr. L.  
Vemola.

(BLADDER neopl.)  
(CARCINOMA case reports)

VERMOLA, Leopold, MUDr.

Practical experiences for organizers at the base of the  
Institute of Postgraduate Training in Svitavy. Cesk.  
zdravot. 4 no.6:342-344 June 56.

1. Reditel Okresniho ustavu narodniho zdravi ve Svitavach.  
(PUBLIC HEALTH, education,  
in Czech., pub. health organizers (Cz))

VEMOLA, Leopold

Primary carcinoma in a diverticulum of the urinary bladder. Rozhl.  
chir. 38 no.10:712-715 0 '59

I. Chirurgicke oddeleni OUNZ ve Svitavach, prednosta MUDr. L. Vemola  
(BLADDER, neopl.)  
(CARCINOMA, case reports)

PALEC, R., MUDR.; STICH, Zd., MUDR.; SKREJOVA, E., MUDR.; VENOLA, L., MUDR.

United hospitals in Czechoslovakia. Cesk. zdravot. 5 no.1:  
21-28 Jan 57.

(HOSPITALS,  
in Czechoslovakia, united hosp. system (Cz))

KERTAY, Nandor, dr.; VEN, Ferenc, dr.; HORVATH, Jozsef, dr.

Isolation of *Mycobacterium tuberculosis* bovin in human tuberculosis  
in the Kiskoros Region. Nepegeszsegugy 42 no.2:41-43 F '61.

1. Kozlemeny az Orszagos Koranyi Tbc. Intezet (igazgato-foorvos:  
Boszormenyi Miklos dr. kandidatus, tudomanyos vezeto: Foldes Istvan  
dr. kandidatus) mikrobiologial osztalyarol (vezeto: Kertay Nandor  
dr. kandidatus), a kiskorosi jarasi tbc. gondozo intezetbol  
(vezeto: Ven Ferenc dr. foorvos) es a jarasi allarososi invatalbol  
(vezeto: Horvath Jozsef dr. foallatorvos).  
(**MYCOBACTERIUM BOVIS**)

ANDO, Jeno; MATEFFY, Sandor; VEN, Mihaly; SEVESTYEN, Endre;  
FELKAI, Aurel; GERVAI, Zoltan; MAYER, Laszlo; GREGOR, Aladar;  
RASCHOVSZKY, Lajos; SZELES, Lajos; BEKE, Gyula

Remarks on the article "The most important problems of  
technical development of electric installations in industrial  
plants and tasks for the manufacturing industry related to this.  
Villamosasag 9 no.1/3:42-46 Ja-Mr '61.

1. A Villamos Eloszerelo Vallalat formernoake (for Ando).
2. A Koho-es Gepipari Miniszterium Tervezo Irodai villamos  
tervezesi osztalyanak vezetoje (for Mateffy). 3. A Villamos  
Allomasszerelo Vallalat formernoake (for Ven and Felkai).
4. Vegyimuveket Tervezo Vallalat (for Sebestyen). 5. Konnyuipari  
Tervezo Iroda (for Gervai). 6. E.M. Tipustervezo Intezet (for  
Gregor). 7. E.M. Ipari es Mezogazdasagi Tervezo Vallalat  
(for Raschovszky). 8. Orszagos Villamosenergia Felugyelet  
(for Szeles). 9. Orszagos Villamosenergia Felugyelet (for  
Beka).

ANDO, Jeno; MATEFFY, Sandor; VEN, Mihaly; SEVESTYEN, Endre; FELKAI, Aurel;  
GERVAI, Zoltan; MAYER, Laszlo; GHEGOR, Alder; RASCHOVSKY, Lajos

Remarks on the article "The most important problems of technical  
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vezetoja (for Mateffy).
3. A Villamos Allomasszerlo Vallalat former-  
noka (for Ven and Felkai).
4. Vegimuveket Tervezo Vallalat (for  
Sevestyen).
5. Komnyuipari Tervezo Iroda (for Gervai).
6. E.M.  
Tipustervezo Intezet (for Gregor).
7. E.M. Ipari es Mezogazdasagi  
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VEN, Mihaly, okleveles gépész mérnök, tanacsadó főmérnök

Up-to-date development of Hungarian-made low-voltage switchgears.  
Villanosság 11 no.6:162-163 Je '63.

1. Villamos Allamasszerelő Vallalat.

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Important link. Okhr.truda i sots.strakh. 4 no.11:30 N '61.  
(MIRA 14:12)

1. Doverennyi vrach Kemerovskogo oblssovprofa.  
(Kemerovo Province--Medicine, Industrial)